

No. 7-249432

**(54) ELECTROLYTE FOR LITHIUM SECONDARY BATTERY**

**(57)Abstract:**

**PURPOSE:** To obtain a stabilized lithium secondary battery having excellent characteristics and a long cycle lifetime by including organic solvent made of specific organic fluorine ether compound in the electrolyte.

**CONSTITUTION:** Low viscosity solvent made of organic fluorine ether compound shown by  $R_1-O-R_2$ ,  $R_1-O-R_2$ , in which  $R_1$ ,  $R_2$  means fluorine alkyl group having the number of carbon atom at 1-10, or  $R_2$  means alkyl group. Even in the interface with the positive electrode active material of a high voltage system having the strong oxidation work, electron is not drawn, oxidation decomposition is restricted, and furthermore, quick rise of the viscosity at a low temperature is not generated to prevent the lowering of the ion conductivity, and the lowering of the battery characteristic can be restricted. Consequently, in the case where this electrolyte is applied to the lithium battery at a voltage more than 4V, the stabilized charging/discharging characteristic with the excellent low temperature characteristic and the long lifetime can be obtained.